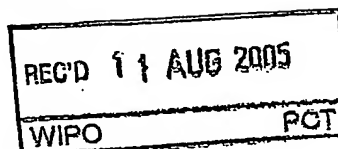


PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty) (PCT Article 36 and Rule 70)



Applicant's or agent's file reference 03039PCT	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2004/004323	International filing date (day/month/year) 26.03.2004	Priority date (day/month/year) 14.04.2003
International Patent Classification (IPC) or national classification and IPC Int.Cl. ⁷ F16J15/10		
Applicant NIPPON VALQUA INDUSTRIES, LTD.		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.
3.	This report is also accompanied by ANNEXES, comprising: <div style="margin-left: 20px;"> a. <input checked="" type="checkbox"/> a total of <u>3</u> sheets, as follows: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. </div> </div> <div style="margin-left: 20px;"> b. <input type="checkbox"/> a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). </div>
4.	This report contains indications relating to the following items: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application </div>

Date of submission of the demand 08.11.2004	Date of completion of this report 22.07.2005
Name and mailing address of the IPEA/JP Japan Patent Office 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan	Authorized officer T. t o h Telephone No. +81-3-3581-1101 Ext. 3368

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/004323

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

☐ the international application as originally filed/furnished

☒ the description:

pages 1-29 _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

pages _____ as originally filed/furnished

pages* _____ as amended (together with any statement) under Article 19

pages* 30, 31, 31/1 received by this Authority on 08.11.2004

pages* _____ received by this Authority on _____

☐ the drawings:

pages _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☒ the claims, Nos. 1-5

☐ the drawings, sheets/figs _____

☐ the sequence listing (specify): _____

☐ any table(s) related to sequence listing (specify): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (specify): _____

☐ any table(s) related to sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/004323

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	6-10	YES
	Claims		NO
Inventive step (IS)	Claims	6-10	YES
	Claims		NO
Industrial applicability (IA)	Claims	6-10	YES
	Claims		NO

2. Citations and explanations(Rule 70.7)

1. Documents

D1:JP 2003-14126 A(NIPPON VALQUA KOGYO LTD.),2003.01.15

D2:JP 2002-39392 A(RIKEN KEIKI LTD.),2002.02.06

2."when the sealing material for the ant groove is fitted to said ant groove ,said concave inlet portion is disposed on an opening cdge of the ant groove,and then the entirely of the sealing material for the ant groove is made to gyrate toward the inside of the ant groove around said concave inlet portion as the base point,so that the sealing material for the ant groove gets pressed into the ant groove in a state where the periphery of said corner portion is elastically deformed" is not described in which documents quoted in the international search report,and not obvious for a person skilled in the art.

CLAIMS

1. (Cancelled)
- 5 2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
- 10 5. (Cancelled)
6. (Added) A sealing material for an ant groove, which is fitted to the ant groove made in a surface of either one of members in a joint place between these
15 members and contacts with a surface of the other member, thereby sealing both the members,
with the sealing material comprising:
an elastically deformable material; and
a sectional shape having: a straight bottom edge which is disposed on a bottom
20 face of said ant groove; an arched convex edge which contacts with the surface of said other member facing said ant groove; a first projecting edge which connects with one end of said bottom edge and projects outside; a concave inlet portion which is located between said first projecting edge and said arched convex edge; a second
projecting edge which connects with the other end of said straight bottom edge and is
25 composed of straight lines that project outside; a straight sloping edge of which one end connects with the opposite end of said arched convex edge as to said first projecting edge and of which the other end connects with said second projecting edge; and at least one corner portion which is constituted in the range of from said

straight bottom edge via said second projecting edge to said sloping edge;

wherein: when the sealing material for the ant groove is fitted to said ant groove, said concave inlet portion is disposed on an opening edge of the ant groove, and then the entirety of the sealing material for the ant groove is made to gyrate
5 toward the inside of the ant groove around said concave inlet portion as the base point, so that the sealing material for the ant groove gets pressed into the ant groove in a state where the periphery of said corner portion is elastically deformed.

7. (Added) A sealing material for an ant groove according to claim 6,
10 wherein the maximum value X of distances of from said corner portion to said concave inlet portion has a relationship of $X/B = 1.00-1.10$ with an opening width B of said ant groove.

8. (Added) A sealing material for an ant groove according to claim 6 or 7,
15 wherein:

said second projecting edge is formed by connecting a pair of straight edges together in a convexly crooked shape; and

said corner portion is constituted in the following three places: a place between said straight bottom edge and said second projecting edge; a crooked place of said
20 second projecting edge; and a place between said second projecting edge and said sloping edge.

9. (Added) A sealing material for an ant groove according to any one of claims 6 to 8, which:

25 further comprises a vertical edge connecting said arched convex edge and said concave inlet portion together; and

makes a clearance between said vertical edge and an opening edge of said ant groove when fitted to said ant groove.

10. (Added) A sealing material for an ant groove according to claim 6,
which:

is fitted to said ant groove of a ring shape in a ring shape corresponding to said
5 ant groove of the ring shape;

has a location such that said first projecting edge and said concave inlet portion
are located at the outer peripheral side of said ring shape;

has a location such that said second projecting edge, said straight sloping edge,
and said corner portion are located at the inner peripheral side of said ring shape; and

10 has a peripheral length extended by 1-10 % in a state fitted to said ant groove
of the ring shape when compared with a free state.